Unbound Notes and Drawings (1900)

This folder contains dated notes and drawings from 1900, as well as undated material possibly from the same year. Included are many chemical notes by Edison, some pertaining to the composition of phonograph record blanks and many involving nickel and other metals. Also included are drawings by Edison of phonograph parts, bricker ovens, and other devices, along with lists of experiments and tasks to be performed at the laboratory.

Approximately 50 percent of the documents have been selected. Among the items not selected are notes by George R. Ficht regarding a coal crushing plant and numerous meter test logs.

1900-04-11

Extr Cardui Benedic
Stiff paste dont puff much
nearly all charcoal -
not shiny - very little
smoke = little boiling more
than Belladonna =

Extr Wormwood -
boils puffs - some smoke
not shiny -

Extr Cinchona Gale gray
Cold process - shiny - puffs
Enormous - ~~Ed~~ = the stuff is
Ropy - transparent like Molasses
Candy -

Extr Matico Spirit -
Melts somewhat - very
little boil hard charcoal
somewhat shiny - some smoke
pbly good - stuff is hard but
unctious -

Extr Shamrocum Spirit -
hard - pbly good - moderate shiny Char

Extr Cinchona - melts
boils - ——

Extr Capit - Papaver -
Dont melt very much puffs some
no smoke - might do -

Extr Columbo - just like Caoutchouc. Elastic dont puff much hard Charcoal - not shiny some ash - might burn

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Extr Jugland & Cort Nuc
dont melt, puffs little some ash might do -

Extract Bryonia
Soft - puffs - great deal white ash - Spirit Ext might do -

Extr Aconit & Succo -
Hard - puffs some might burn some ash - Red -

Ext Phalaris Aqu dry 11.
dont melt. Enormous ash - Easily oxidized Charcoal burns all way pbly on cut ash

Extr Ralanthia - pure in Lamellae - glass like elegant dont melt puffs very little, large ash - burns very slowly - pbly ng without ash) get out a lime salt pbly -

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Resorcin - Melts (to be burn) Burns

Tropaeolin - shiny char good - dont melt puffs little, powder - dry -

Carmine infusible -
great amount ash - Easily
burned Charcoal if that
ash got away pbly OK.

Aniline Rotti (Scharlach)
Dont fuse no ash - tindery

Nigrosin alc lösl -
Seems fuse prob little dont
tinder no ash. not shiny -
might work =

Anilin Gelb -
Martius - ashy
Nitro Compd Explodes -

Rosaniline - Melts, boils
large part goes away -
Some of that shiny stuff left

Nigrosin Sal Water
Dont melt Carbs completely
dont even stick together
it powders dont tinder
Charcoal dead black
Something in it -

Anilin Red Comp. dont
melt. dont stick together little
tindery not shiny - might do

Ext Senkiance –
Melts boils puffs – very shiny if could be conc by the compg it might answer

Anilin Braun (Vesuvian) puffs greatly but shiny charcoal if puffg could be got out by cooking & partially degassing & the residuary turned to O/C

Hydro Quinone CP melts ng

Murexide – dont melt. scarcely any fusion hard shiny charcoal, seems to be A1 O/C

Pepsin puffs somewhat not very shiny char – might do.

Ammonia Benzoic Melts ng

Antifungin dont melt dont fuse, most difficult Carbg Substance I ever saw – requires full red heat, Charcoal dense fairly shiny – dirty manganese mt

Anthrachrion Melts ng

Naphthalamin Chloride
Sublimes ng

Phenolphtalein - melts
but about 25-pct residue
Shiny Carb —

Methadiamidobenzol
sublimes ng

Sulphtalamin 1/2 goes way
other 1/2 blacks but hard
not prfd — may do

Piperine ng —
melts —

Salol - Melts 1.2 ng

Aloin - Melts puffs ng

Santonin Melts ng.

Cimicifugin Melts
somewhat puffs much
blacks Char tindery

Podofo - after Podofo goes
off char hard not much
of it - might do for getting
Podofo to asphalt Easy

Chloral Cyanhydrat ng

Acid phtalic Melts ng

Anthrarobin Melts semi
puffs stand. high temp
Char fairly, shrg not
much good 9 grams

Acid Sulpho-anilic Cryst which
dont melt infusible. Keeps
shape Crystals - if char could
be made Salvable it might
be a dandy

Protein semi Melts puffs
Char not shrng

Extr Trifolii Fibrini
puffs - ng

Ox gal ng -

Extr Couchgrass puff
too much

Extr Aloes Cape puff too much - shrinking Canba

Extr Ignatia puffs too much Semi fuses -

Extr Calabar Semi fuses puffs too much -

Extr Colocynth puffs - Char hard - might answer

Extr Monesia bark ag - Mont fuse hard - may do

Extr Hyoscyamus. Liquid puffs Enormous pbly on account water pbly ng

Hydroxylamine Hydrochlor melts ng -

Ur-Ethane - melts ng

Conglutin - fuses puffs enormous melts ng

Indigotin - Volatilizes

Lactucae Extra -
Puffs - but possibly could be
cooled down but - on Carbs
it puffs badly - leave large
quantity of not shiny charcoal

Extract Calendula same
as Lactucae -

Extract Belladona from juice - Carbs melted
melting puffs scarcely any
1st class Charcoal not very
shiny - stands red heat
still little soft -
dont puff on heating

Extract Marrubii - dont melt
puff more than Belladona -
poly cause its got more water in
it brought to same Consistency and
poly act like Belladona

Diphenylamin Sulphate
melts. Residue then Carbs
Shiny so pot residue -

Furfurin - melt no

Bromal Hydrate melts -
all goes away

Ext Dandelion -
semi fuses puffs ~~[illegible]~~
not shiny

Extr Digitalis - puffs
Alcoholic Extr might work
DK - abundant residue
not shiny

Alkannin - Insipaled
Melts Liq. boils - inflam
gas but residue say 30 pct
gives very shiny Car
A very hard deposit -

Extr Licorice - Clean Sal -
pyr Crude Extr - puffs
Lundberg -

Extr Stramonii -
puffs greatly - not shiny

Extr Duboisiae - Spiss -
puffs but Carb hard -
Alcohol Extr may work

Extr Chamomillae
puffs but very hard Carbon
Alcol Extr may do -

Extract Malt - is Excellent
puffs badly but Terribly
shiny hard
puffs - Alcohol Extr may do
or some other solvent phenol
puffs

Aniline Blau - Naphthalin
Dont fuse Carb; Carbo Tinctory
may do for mixing —

Fluorescein - melts
puffs - no —

Hydrochloral Rosanaline -
Hard Cryst puffs considerably
hard Carb - not very shiny -

Aniline Orange
Helianthin
puffs not very shiny
or hard

Eosin - infusible -
Carb wholly - not shiny
Hard Carb good.

Aniline Gelb -
Manchester.
Carb fairly - Procedure
most Lime - no -

Aniline Green
Brilliant - melts
puffs flaky shiny not large
Residue pasty no

Aurin - Metts puffs greatly porous shiny Char -

Aniline Chlorat Metts
neg -

Aniline Roth puffs little not very shiny
can not hand
might do doubt it

Aniline Chrysoidin:
puffs somewhat - shiny
porous Char many ends

Aniline green Malachit metts.

Dimethylaniline orange
puffs - shiny -

Aniline Orange Methyl free
from arsenic scarcely any
puff - hard - good - Nothing

Aniline Blau - phenyl
puffs shiny porous -

Aniline Brown Bismark
puffs great very shiny -

Anilin yellow - Premal -
pufs tendency ng

Rosaniline acetic
pufs - ng

Anilin Blue Methylene
pufs greatly very shiny

Anilin Yellow - Naphthalin
explodes full Lumi.

Extr Dry Belladona
good - little lumiency
not shiny -

Extr Jalap aqua -
pufs - hard Carb not shiny
may do -

Anilin Green - good -
pufs - shiny - poison

Pyrogallolein Meth ng

Trichlorphenol melting

Extr Hydrocotyle -
shiny do in blood -
Hard Carb - dif to Carbon
something must -

Carbonate - puffs considerably
rather thing - not hard -
not so good as many the
things tried.

Litmus dont swell
Carbon keeps shape scarcely
anything Comes off - dense
dark Carb - apparently not
much ash good -

Campechy Extract,
swells act like Carbonate
Shiny porous - fair
Alcohol might res

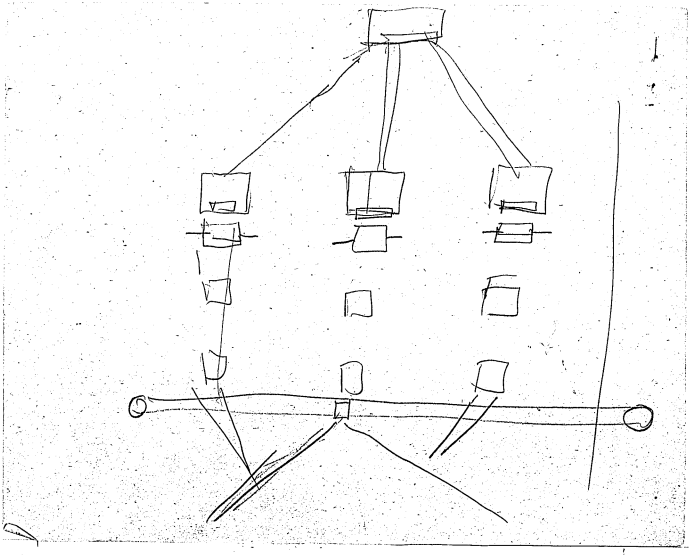
Solvents for Carbonate
pyridine good -
Benzil Aldehyde ~~elegant~~ good
Furfural good -
Styrene - Extra good as it can be
made thicker than any heretofore
tried - the liquid is also very thick
more carbon can be worked into lump &
thinks at least double. & notice
that even after dough very hard it will
often showing a gradual action
liquid not volatile except with heat
It dont seem to dissolve it in one sense
but make it stick together tenaciously

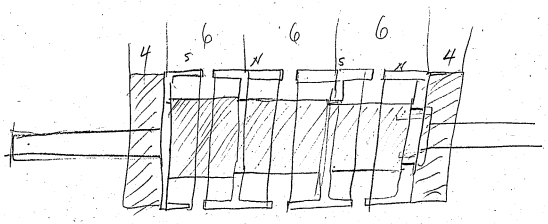
Mucerexcide - Aseptol very slightly
"

Eosin & water good no puff
dense Carb - Eosin may have
an inorganic material in it if
not good -

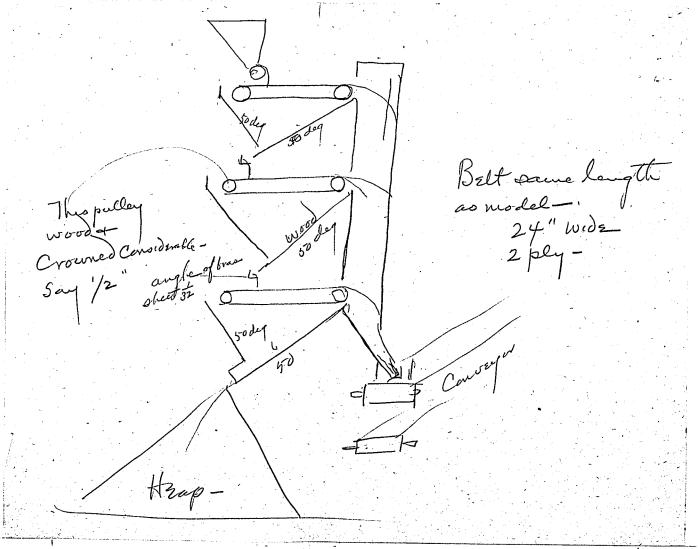
Aniline Red Congo dont
puff in least great deal
smoke comes up. Calcrack
on Carbz. Sal water to fair
but brittle dough. Think its
good — pyridin makes a
more tenacious dough
with pyridine Carbon more tendency
dont ~~[illegible]~~ puff in slightest,

Styrene not quite so tenacious
as with water dont swell
by tinding seems to be
considerable part of incorporation
in it —





This is same as model
but the diameter is increased
25% & everything else in
proportion —


50 deg
50 deg
Belt same length as model -
24" wide
2 ply -
This pulley wood +
Crowned Considerable -
Say 1/2"
angle of bar sheet st
Wood 50 deg
50 deg
40
Conveyor
Hzap -

Mr Ott:- two presses as per model
I understand you are making
the following for Blank Plant

40 Cooling Jackets-
1500 Iron Cores
14 Dipping Machines
Jacket Coolers Shells
6 holes each
for Cooling Jackets

Nov 19, 1900

Lanolin — for Oil Clear Mellow
Chinese Wax [illegible]

Erucin Rape oil
Cetyl palmitate Spermaceti
Myricyl palmitate Beeswax
Ceryl Melissate Chinese wax
Dodecatyl Sperm oil + Bottlenose oil
Ricinolin Castor oil —
Olein Elaidin — solid

Arachidic acid higher melting point than Stearic acid — 75c

Cold cleansing dissolves adhering oil on skin + then it now cuts it is pure
Cetyl palmitate

Myricin Chief part Beeswax — is insoluble in alcohol —
Ethyl Stearate, Wax like Easy fusible —

With Electrograph Cylinder with Sr Ba Li Na Hydroxides. also NH_3 - Sol of
Carb Soda, Borax pyridin,
Put boys finishing chemicals to make chalks, those not on hand and to improve
& also make fulcrat much tools —

Propane freezing Tungstates, Molybdates. Chromates, Arsenites, Chromates,
Zinkhexacyanide, Magnesia hydroxide. — Try the Ni Ox in other room —
Try BaO_2 Cylinder moist with Ba OH, & put in CO_2 recommit the contents
porcelain nearly filled with $BaCO_3$ — . Try $BaCO_3$ for cutting for phone.
Also Oxalate Ba, see also Carbonate, pyridin Comb also the Oxalates,
Try Selenyl Sulphates of metals for phone & Engy also Benzoates,

Lorenzo's tool.

I = Try a $BaCO_3$ with KOH glycerine Sol – ditto KOH alcohol Sol
ditto, Hydroxylamine, Ditto Borax

Oxalate Barium – white powder
" Bi " amorp
" Cd – " " "
Cerium "
Co Powered powder
Cu " powder
Thorium
Pb white precip
Hg per " white
" white amorp
Ni powder or Cake
Strontium white powder
Zn "

Try Cad Bi carbonate in Nitric Acid (Ether Sol) Nitric Acid (Ether Sol)

Oxides Mg
Antimony Tin
Bi
Sb
Cr
Ni
Co
Fe
W.
Ur
Cr
Cd
Th, Zr, Ruth
Cerium like CeO_2 –

Mg cylinder pulverized –
Al " "
Zn " "
Light pressure – Bing
Horn, Rouchale –
glue –
Best thermo alloy?
Iodide Cadmium
Iodic like –
Pure Thick
Sulphide Zn

Hydrogels – precipitates –

Iodide Bi Cu Co

Leather Sulphone

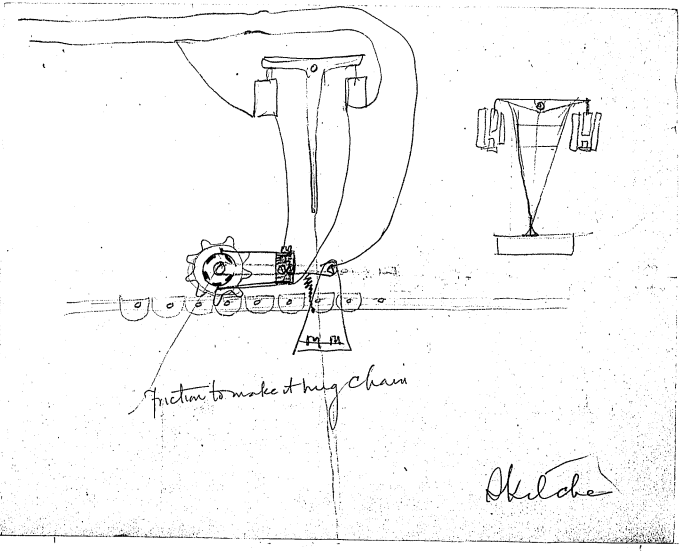
Carbonate – Cd white ppt
" Ce "
Pb – pound lead amorp
precipt CO_2 & H_2O in Sulphate
Mg – use Mg peroxide, Sugar –
Mg Magnesia Alba is very light powder yet thick –
Mn – amorp –
Sr – powder smooth to touch
Zn

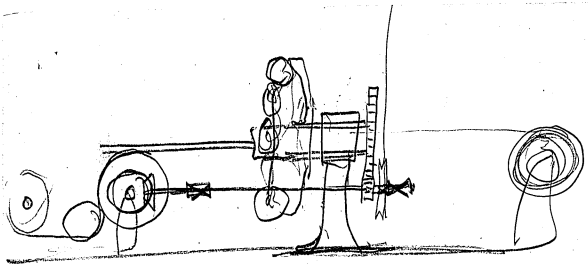
Try Bi carbonate for Bismuth & platinum

All the fluorides,

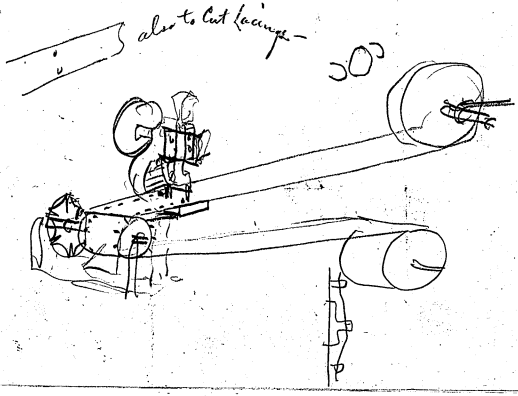
Miscellaneous
Sodium Ethylate
Iodide of lead
" Copper
Calomel nearly insoluble fine powder
Mercurous Iodide powder
Mercuro mercuric Iodide powder
Mercuric Iodide Powder dry form in by pressure
Hg hydrate, yellowish –
chemical agg
Cyanides – Co precip
Ag
Zn

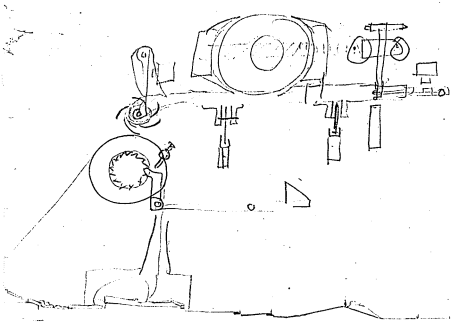
Ferrocyanides,
Ferrocy Co – precip
Bi "
Mn
Zn

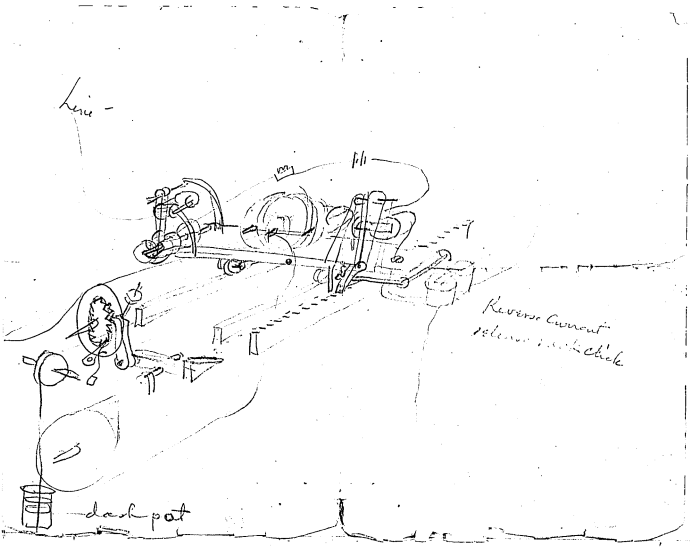

Friction to make it hug chain

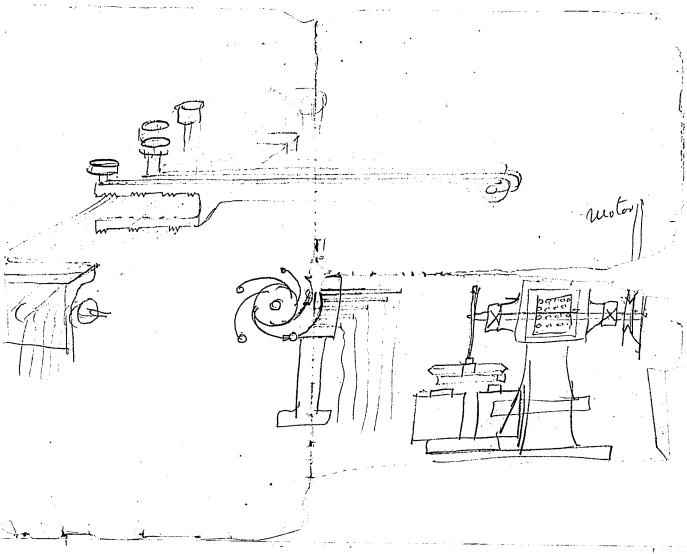


Covering rope with the Marlin






Reverse Current
dash pot


motor

Acetolactic acid Ba salt, a gum
Cu salt amorphous gum —

See Tannates Urates Albuminates

Nil Mg des. alcohol on cooling from boiling Sol deposits a
cliff like Manganin —

file sketches

Tungstates

Tungstates of Barium – Strontium Calcium,
Aluminum – Zinc Lead Mercury
Cobalt Copper Tin Chromium –
Iron Manganese, Nickel, Magnesium

Molybdates

Aluminum Barium Chromium Calcium
Zinc Lead Mercury Cadmium Cobalt
Copper Tin Chromium. Iron
Manganese, Nickel, Magnesium

Phonograph

Acid Tungstates Aluminum – Mercurous Lumps
Oleate Chromium Amorphous
" Copper, Cobalt Lead
Magnesium Mercuric & Mercurous Nickel
Potassium Sodium Zinc Calcium
Strontium Barium, Calcium ~~Cop~~ Iron Tin
Manganese Aluminum Magnesium

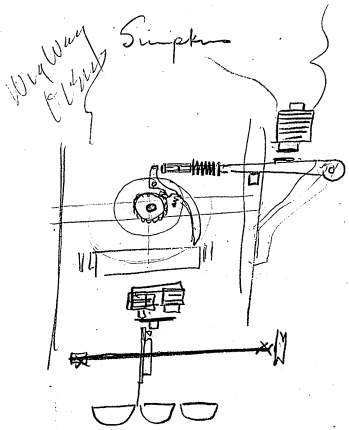
Chromate

Chromate of Barium, Lead ~~Bismuth~~
Mercurous, Cobalt Manganese
Strontium, Calcium, Zinc

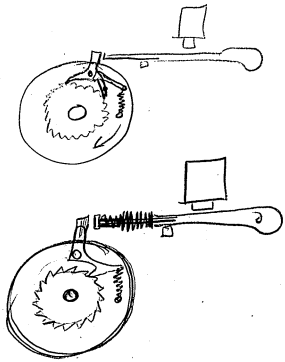
Borates

Barium Calcium Strontium,

Phenol,
Chromate Iron, resinous
Lactate Ammonium Bromide neutral salt
Chromium uncrystallizable — Ferric Lactate Mangf
Magnesium and Hg
Na Lactate Dibasic Citrate hard mass


Wayway
Simpkins

W. & W. Simpkins



Magnetite Pottery 1
Iron pyrites 1
Monosulphide Nickel —
gold —

Try 2 Milligrs Mullipie also arrow
see which only affects Indian Rubber

Get good chalk then put in tin foil, + see how long
Keeps without remoisten

Dilute the KOH glycerine 1/2 + try it
think twas too thick —
Try Cubonate Soda, Try pyridin also
Ammonia in Water
Try the paper Cylinder again
See if one Emg will lack to the other without
Current —
Tellurium from or pound or Emg

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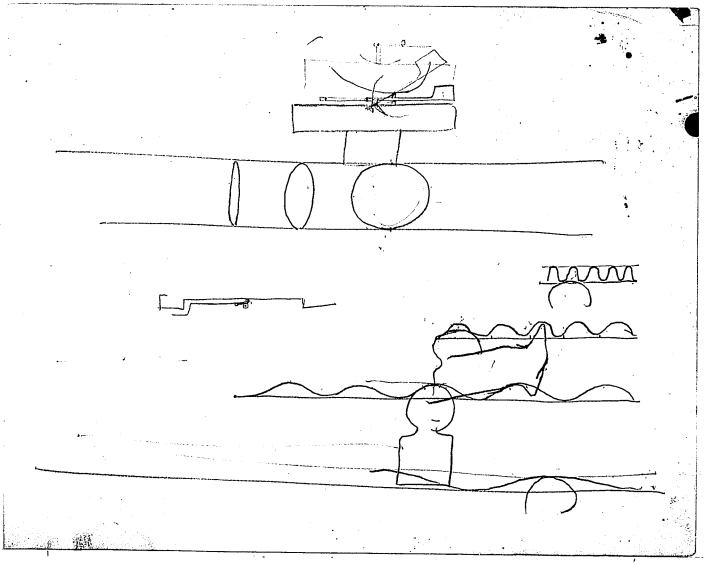
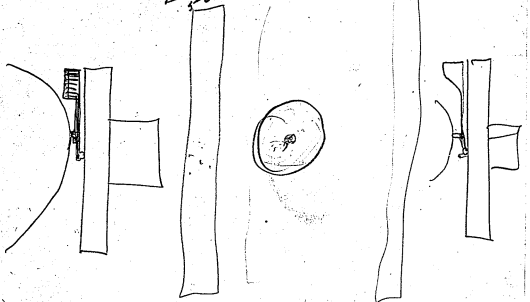
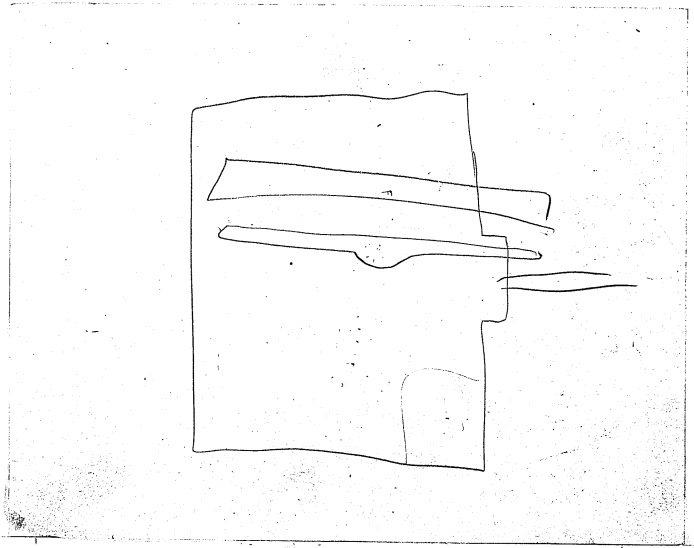


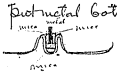
50
10000
33000) 500000 (15.7.
330000
170000
165000
5000

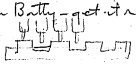


6 –



No 1 Put metal bottom in Batty - get it ^





No 2 Find Dinnouy Recorder & Repeater

3 Position Oil House -

4 See How Shows Liquids progressing - also guide at end

4 Show Hettington Clinker from Shock

5 Test Lamps Thermometer

6 put 100 lbs 200 mesh or finer Enamel flour mixed with 50 mesh Edison Concentrate & bring to yellow to brick it =

7 Clean up desk

8 Write to Phila man about Lilahfield Conn Nickel —

1 Gilmore ~~[illegible]~~ Wed factory — also how deep Yoe G well flow 56
2 Coal ~~[illegible]~~ ~~[illegible]~~ Lake W.O only cut out — changed
3 Mallory about 2 ~~[illegible]~~ ~~[illegible]~~ Natural arch — ~~[illegible]~~
4 Price Wm — water 100 gal large Commun —
5 Gilmore find out if any wells bored in Valley —
6 = Scale ~~[illegible]~~ Specif —
~~[illegible]~~
7 test the small grid Fe for amalgam —
8 Mallory Attn about Steel Bundle and
9 ~~[illegible]~~ Hunter sketch out building 50 @ 200 shed
10 Hunter figure out Oxalate furnace —
11 Mallory find out prime mulleen proclorulfate 9m —
Oxalic acid, ditto blue Vitrol, Nightwrite Ti Extr
Drugget Curtin —
12 - Butley 6 ox
13 Shed for Chlor cutting —

Skeda

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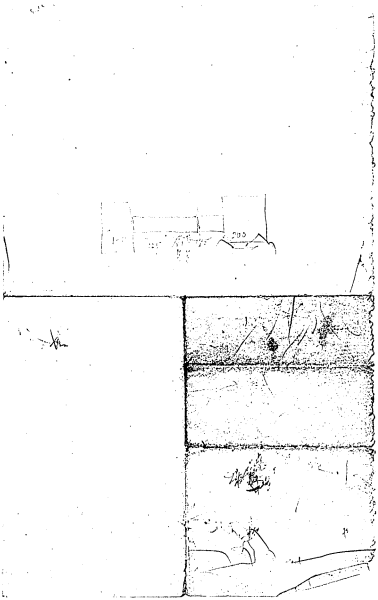


When ferrous Sul is precip at boiling heat
by Na Carbonate with addition of Hypo Na
& dried at 100° it Fe_2O_3 H_2O —
(colloidal, gelatinous)
if in Cold Fe_2O_3 $2H_2O$ — The 1st is pably the
one got by FeS process

The precip obtained at boiling heat
Exhibits peculiar change of color when
ignited at red they leave Brown ferric
at higher brick red & at white ocher-yellow
& gradually violet, yet all have same
specific grav

Anoxide of above character cannot be
prepared from a ferric salt in wet way
But may be obtained by adding
Basic ferric sulfate to fused KOH
& lixiviating fused mass, but has
formula $3\ Fe_2O_3\ 5\ H_2O$ but by
Continued fusion in KOH, less H_2O

Potassium Iron Sulphide $K_2Fe_2S_4$ purple brown flexible needles permanent in air, but heated in closed vessels but oxidized to ferric oxide + K Sulphate when heated in contact with air

fusing 1 pt Fe, 6 pts K or Na Carb + 6 pts Sulphur + triturating —

Try the KOH FeS fused stuff heated in air without H_2O —

See 2nd Supp 687 Ferrous Ox anhydrous obtained by action of CO_2 on iron at red heat. $Fe + CO_2 = CO + FeO$ oxide thus obtained is black crystalline & magnetic & agrees exactly with the formula of Fe_2O heated in air it goes to Fe_3O_4 —

Jacquelier Compt Rendus lxxiv 531

Fuse Sulphide Ni in KOH + water at Dame des Fs —

Fluoride Calcium pretty good
Phenomenon wet it at 1st KOH
loud + good, kept wetting KOH
got louder, then wet with
water got louder again
going weak another one
only with water wetting
polishes — smooth not
so good as Tungstate
but must be Exposed
with $BaCO_3$ $CaFl$ + WO_3
are the most successful
ones, with WO_3 ahead —
Every Count

to test Roth for heavy Metals
Supersaturate with acetic & test
with H_2S & NH_4 Sulfide —

Solutions of ferrous salts heated to 130 @ 140 C
in sealed tubes with Hyposulphite Na
decomposed completely giving FeS which does
not oxidize in air nor attacked by dilute sulph acid
or strong HCl.

Strongly ignited ferric oxide heated to redness
in excess Sodium Hyposulphite yields
Black sulfide iron sol in HCl.

Matthiessen says all iron reduced by H.
with present precautions gives traces NH3
when diss in HCl —

CP Iron by heating Nitride Iron below MPt of Lead
it cuts like lead & oxidizes easily

Nitride Fe Sublimed Ferrous Chloride
absorbs NH gas at ord temp This
when heated nearly to redness
gives Nitride — gray powder
Dmpt 522 MPsup 752

Reduce some flake specular + then oxidize it to Scale Oxide

Make so Ferrous O anhydrous — by drying precipitated + transforming quickly to tube + passing Hydrogen or Boy in dark over hydrogen + use phos anhydride

Find Burns sample of nickel picked from New Hamp + have chemist assay for nickel

Make some peroxide lead by nit acid wash + dry + then use 20% KOH + dissolve all lead out peroxide testing liquid by HS — until it dissolves no more — wash with boiling water

Start + make a lot of N_2O_3 with Ca Hypo + grid litre out OR so can get a quantity to test for impurities after drying — Dekelchen

Protoxide Lead dissolved out Peroxide by very dilute acetate lead
Nitric acid also does out proto = Nitrate by dilute
Perox can be made by passing Chlorine —

Perox made by acting on dead Hydroxide suspended in water by Chloride HCl is formed but Perox pb is made in acids —

Muspratt says best method prepare pure perox lead is by mixing a hot solution of Lead Chloride with a solution of Bleaching powder

Strong Solution Nit Lead gives by Electrolysis Crystalline peroxide —

I think nothing but Fe can be used going to metallic state on account local action but instead of having FeO Combine with Fe_2O_3 – the latter acted as substituent by a more acid sesquioxide & the heat of Combn would raise the value for malleable

Cr_2O_3 – Al_2O_3 Mn_2O_3 & U_2O_3 Sb_2O_3

Uranium magnet decomp H_2O. it forms $UrO\ Ur_2O_3$ analogous to magnetite –

1 = The HCl solution of magnetic oxide should be poured into the ammonia and not the NH_3 into the solution as NH_3 precipitates ferric first —

2. There are 2 other Iron Compounds $4FeO$ to $1Fe_2O_3$
6 " " "

3 Chromic Iron $FeO\ Cr_2O_3$ analogous to Magnetite.

4 Anhydrous ferric ox may be obtained by heating pure Fe in Carbonic Anhydride —

5 — Ferric hydroxide is dehydrated by heating to boiling

6 Ferric ox Fe_2O_3 is a feeble acid & combines with powerful bases (10) FeO CaO etc —

7 Chromium forms a sesquioxide & a Chromic ox Mn also Cerium dito —

8 Ferrous hydroxide like Cupric hydroxide is dehydrated by boiling in a vessel from which oxygen is excluded —

9 — Cerium oxide to higher ox's with facility

~~Chrom~~

Sulphate Chromium precip by KOH containing ZnO
Combines with the Zn ox precip – also alkali oxide
Can these react in alkali & held of Cr Ox is raised
up & down by Electrolysis

If ferric is an acid perhaps can form $MnO_2 Fe_2O_3$
& in alkali reduce the MnO to Mn & it will
then oxidize MnO & instead of going higher
Combine with the Fe_2O_3 – + O_2 mod in alkali –

Possibly Cr_2O_3 & FeO would be better than
FeO Fe_2O_3 as the action would be stronger &
would get a higher Valence like lead but &
Sulphate.

or $FeO.Mn_2O_3$ –

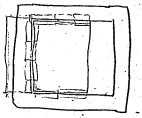
Possibly $MoO\ Fe_2O_3$ or $MoO.\ Cr_2O_3$ or
$WoO.\ Fe_2O_3$ – $FeO\ Cr_2O_3$ or $CeO\ Fe_2O_3$
$FeO\ Mn_2O_3$? ? $UrO.\ Fe_2O_3$ or $UrO.\ Cr_2O_3$
or $UrO.\ Mn_2O_3$ – or $UrO.\ Mo_2O_3$
$FeO,\ Al_2O_3$? maybe good –
$MnO.\ Mn_2O_3$ – MnO is pumpkin brown, its Combination with
Mn_2O_3 to form Red oxide of Mn as a salt
+ sulphuric ox –

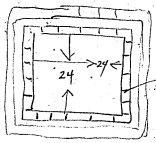
All Analyses
higher the best
Very good results

file Sketches

Bucking furnace

Silicate of Iron Binder

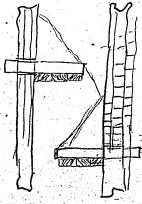




Inside 24 X 24

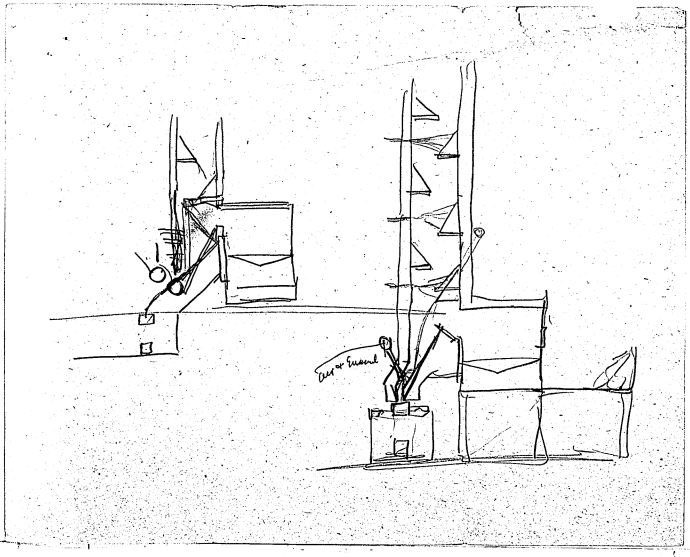
inner - fire brick
2 outer - fire plenum
- brick - Wall 12"
1 brick -

Portland Cement used
Entirely =



2" slab fire brick

Fig 8


Exit funnel

grind antimony Chl Iron with Caustic Lime —
also sulphate Iron —

also try grinding Chl Ni also sulphate with Caustic Lime

see if can peroxidize the antimony ~~Ox~~ Ni by Peroxide Sodium grinding together, also by putting in Hypochlorite,
~~or Oxygen~~

see if can Dehydrate Ni Hydrate by boiling in pure glycerine —

See if graphite Coin be metalized
see if to a boiling solution of Sulphate Nickel Zinc powder will precipitate the Ni as a metal —

Try grid with Cobalt Hydrate,
instead of 8 Ni & 2 graphite in little grids use 7 & 3 perhaps lessened graphite was cause of failure grids to work but I think not, but if it was then try 4 graf —

Try 8 Ni 2 graphite and 1 filament of asbestos wrapped through stuff —

Mallory get some of that steel wool —
Reduce ~~oxide~~ Fe from the Nickel pitch & pack this in grid with 3 graphite —
If the 1 '/16 Ni Lead work in many rows one open [illegible] rather than rip top of open

Solution of Hypochlorous acid oxidizes from
phenyl-quinolyl-ketone chloride, Hans Chelmicki
makes some —

It is said that Ni Hydroxide can be
obtained Crystalized by decomposing
the Solution of Nickel Carbonyl
in ammonia by Ebullition
make —

Nickelous Hydrox forms Double Compounds
with nearly all the alkali Bases
Those with KOH + NaOH are decomposed
by frequent washing along boiling
in water —

Make some Ferrate of Iron + use it
in a 40% KOH, in which it is most
stable — Decomposes in weaker Sol

Manganous Chromate can be raised
to Manganic Chromate of Electrolytic O
Watts Chromates make & try thinks
not sol in Alkali

Nitrate Ni with 20% Solna acid
+ pp by KOH, quickly cohide
otherwise at flat — Excess acid
prevents KOH combining with
H_2O —

to get pure peroxsulfate, bring
syrupy soln of Manganese Nitrate
to 160 fahr — Then dont
combine with KOH but run on
reduction in KOH but in NH_4Cl
+ Zn it will be ok by both

There is a perox Mn_5O —
Hydrated Manganeseo Manganate,
made by acting on acetate Mn
with chlorine for a limited time
$MnO, 5 MnO_2 = Mn_6O_{11}$
this ox heated in current air abs
ox stable at 140 C —

1. Asbestos soaked in silver, dilute Cop., dilute Ni, dilute Plat, reduced by H.
2. also thin paper + burnt out + reduced by H
3. use of organic alkali - ~~Alk of amm~~ alcoholic amines —
4. manganese grid + Zinc oxide in alcoholic amine solution in which Zinc insol —
5. graphite + Copper oxide by treating precipitated hydrate or finely divided CuO by Hypo —
6. Nickel, Silver, Copper plated graphite
7. purified graphite, fused + treated with acids or HCl —
8. KOH, fuse Carb — or acid and oxide —
9. Molybdenum on grid ~~with Ni~~ —
10. amalgamated Copper scale on graphite — Lehmann —
11. speak of putting all grids ammoniacal silver solution —
12. Reducing oxide Ni by Hydroquin
13. Reducing oxide Fe by H to Fe_2O —
14. Reducing " Fe to metal when a needy by Hypo or oxalate + quite —
15. Putting grids + caps for Ni to be made entirely Ni other than Ni plate) —
16. painting grids by members to prevent oxidation —
17. ~~Oxidizing~~ Reducing — presence of Ni oxide or in most gas —
18. Briquette lift pressure + final pressure together —
19. Hydrolyze with Iron
20. " " Copper
21. " " Zinc
22. use of volatile material in grid to give appearance of being valuable before use Campbell, Carb Ni Hydr 56
23. use of oxidized organic depolarizer with Zinc Tartrate — alkali — amines Glycolate etc.
also organic peroxides —

Geldhs

Run some Ni wire thru roll to flatten to 1/8 thousandth or less pitch with No 0
see if can form Ni scale like Copper
Form heavy scale on inch by 2, then put on battery + peroxide it – Cover
see if Ni scale can be peroxided by Hypochlorite. –
Form Ni_2O_3 on Ni plate from acetate, if it works, use hot flattened wire
+ deposit peroxide on it + pack in $\frac{1}{16}$ grid –
see how thick peroxide Ni can be deposited –
Freddy pack a cyanide K[illegible]
Make one more KOH hot – Give acetate Ni –
Wash the reduced Ni or act on with acid + tell free Zinc pack grid –
Have Ni sent to Bloomfield –
Insert some graphite ~~with [illegible]~~ with ~~other~~ Hypochlorite hot
+ pack grid –
pack grid with much finer graphite –
" " without graphite –
" " Dry then treat grid with Hypochlorite for 3 or 4 hours
+ then put in + oxidize by act =

Try oxidizing iron with Blacksmith scale or with Hypochlorite to Na
plate some of the $1\frac{1}{2}$ thousandth brass with Ni + ~~[illegible]~~
then cut in strips + eat off –

Freddy makes a mix for weight to pack a $\frac{1}{16}$ grid using finer
phase, then slightly dampen + press it 1/16 in moved by pressure +
insert in grid – get weight when 1/16 thick –

also take some of the FeO_x from oxidizing FeS + add
little KOH + mixed it 1/16 thick + put on grid – not
some graphite (fine) with it also + without

also see if can make wire rough by pressure
+ then broken up 1/16 size

Acid Calcium Silicate
" Magnesium " gelatinous

Watts 3rd Sup 1019

Sulphite Calcium dis in
Sul acid 10 times wt of $CaSO_4$
dis — The salt thus
~~formed~~ melts at 220
to a pretty magma

Hypo sulphite soda warm dis
gypsum form Sodio-Calcic
Hypo sulphite — in briquette
heat goes to gypsum

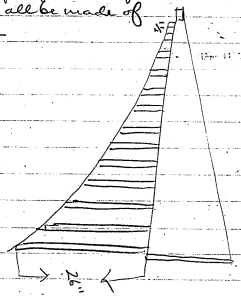
Hypo sulphite Calcium
Very Easily Soluble also on
~~heating and decomposition to gypsum~~
& free Sulphur

Sucharate lime
Resinate Soda
Calcium
Magnesia

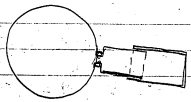
Sulphite Aluminum in which
is dissolved Alumina — tri hydrate
gummy Sticky salt see Watts
also formic acid salt

Page 1

These recorders are screwed into the funnel all in a row or may be staggered around — They are made so each can be made twice the length by pulling out telescope end — the hole from funnel to funnel should be about 3/8 dia — Can all be made of heavy tin —



Funnel about 30 inch long heavy tin or iron only 1/32 or 1/16



Details

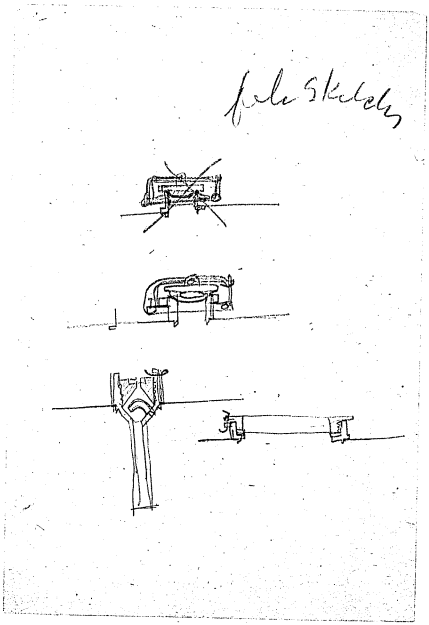
1= ~~order bill wind [illegible]~~
2= ~~see for [illegible]~~ — Mailing Club about another Roll 3 H
3= ~~Note — How gets [illegible] Chemicals etc~~ —
4 ~~— Bicycle [illegible]~~ —
5 Young Old labels Hilting bottles —
6 ~~Hayes about Sh [illegible]~~
7 ~~Hayes about Injector — [illegible] take [illegible] Club~~ —
8 Cal about air reservoir for little compressor
9 = Silencer — block glass —
10 ~~Mailing [illegible]~~
11 ~~Letter [illegible] Spring Model~~
12 ~~Hayes [illegible] Oil Setting~~
13 = Hayes about saving or grinding slots bottom glass
14 ~~" " [illegible] slots [illegible] for [illegible] Rolls~~
15 Daly pressing slots + gloss to secure it when shot —
16 = ~~White — Belching proof~~ — Illuminated field etc —
17 Frame closet in Lab at House
18 = ~~Hayes [illegible] Filling bottles with H2O2~~ —
19 = ~~see Mailing about Steel Co drawings~~ —
20 ~~See if Hobbs sent final drawings~~ —
21 Gulliver Hobbs sent financial Sheet 1 & 2 C
Showing debt to me — stuff sold etc —
22 = If Gulliver sent Hilton time to [illegible]
23 - Bulmalen progress —
24 - If got small blower for use in test Room Carnot Wks
25 = Refine progress — + trying Fauvel Gallery
26 = Where Smokers are — to report + make it up — [illegible] before going further
27 = Violette dark room lot in Light —
28 = Days about Nickel Sep patents — + taking out new patent in US + Canada missing Connes stuff etc —
29 = patent turbine automobile —
30

Alloys for soldering

Use Cadmium as a base + alloy increasing portions of following

Bismuth
Antimony
Zinc –

Also with Bi + Sn as an alloy in various proportions + use this alloy with Cadmium –



flesh tints

Boil Kermes Mag — ditto ~~alumina~~, Sesquichloride Iron
ditto alumina, Nickel with 20% ROH acc of
Salicylic, if not make varnish thus —
Called Soap Varnishes — Boil good very soap
with distilled water till dissolved filter while
hot through cloth — heat again and add an
Equal Volume water and in boiling Solution
of alum as long as a precipitate forms
allow precipitate to settle, draw off the
Water add fresh water stir allow settle,
do this 5 times finally filter through
paper, dry then put in an evaporating
dish & heat on Steam bath till
Consistent finally stir it into
Turpentine nearly boiling until a very
thick Varnish is obtained —

do above with Sulphate Iron instead
alum — also Sulphate Magnesia

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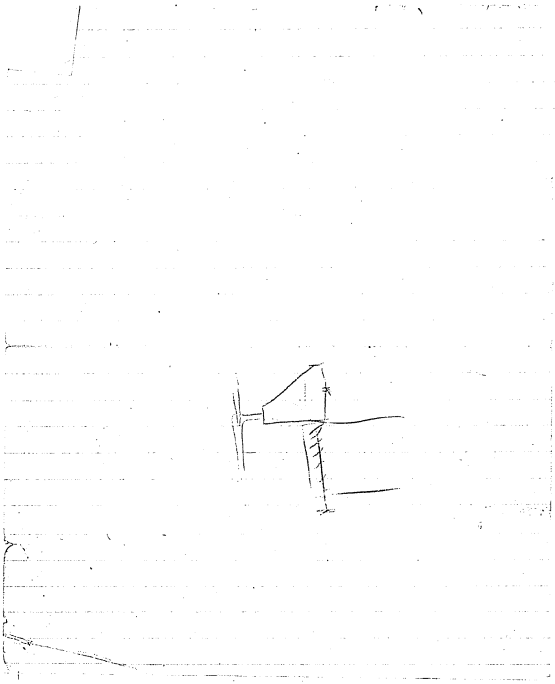


Fole Sketches

To make Black oxide, to boiling solution of Cupric sulphate add Metallic Copper by degrees — will need continued [illegible] of sodium sulphate, boil in water

[illegible] some glycerin, some [illegible]
Chloride, [illegible] [illegible]
some [illegible]

Saturated [illegible] [illegible] by Cop

[illegible] of Silver [illegible]

Solution of Iodine and [illegible] with a
Salt of Silver [illegible] to metallic state

a [illegible]
[illegible] of [illegible]
metallic Silver.

Phosphoric Ether pp. Cu Ag Fe

1 In Pt Crucible melt KOH & put in 200 mesh sulphide Mn — Fole Skiles

2 See if there is any chance of Chromium interfering with ferrous test —

3 Roast some 200 mesh sulphide — idea being afterwards to reduce by H to get concentration —

4 = Magnesium Zn Export boil sulphate Zn with Zn — Mg — al — etc to reduce metals, then precip to get oxide — for KOH sol —

5 Zinc deposited from alkaline sol to which some KCy is added

Emmens has found 0.25% of platinum in Oxide Co Nickel —
They go out in a fortnight or more because Coin with Zinc
Opinion Pt seems not to pass Cyanide
[illegible]

file Sketches

Jude McCallum

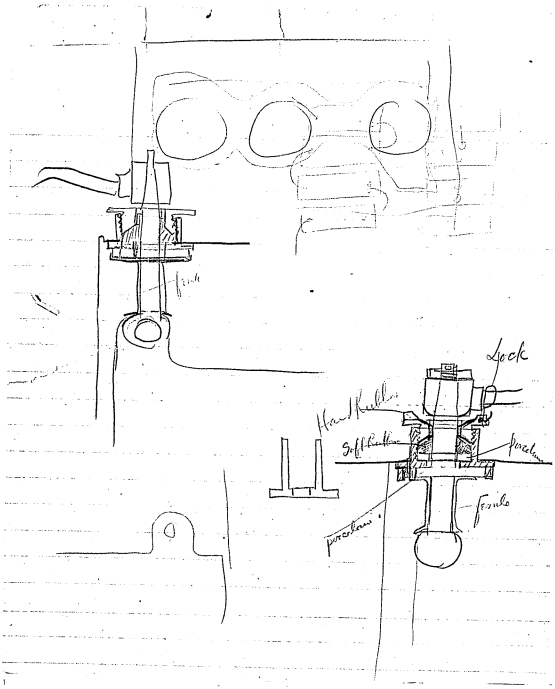
Discharging in 35% ~~of~~ 16 by the Current of a Ni meter
charged gives very little swell —
Moral KOH not cause of swell by being forced in

Soaking new Ni in 35% KOH, very little swell,
Moral not the natural absorption of KOH that
Causes swell,

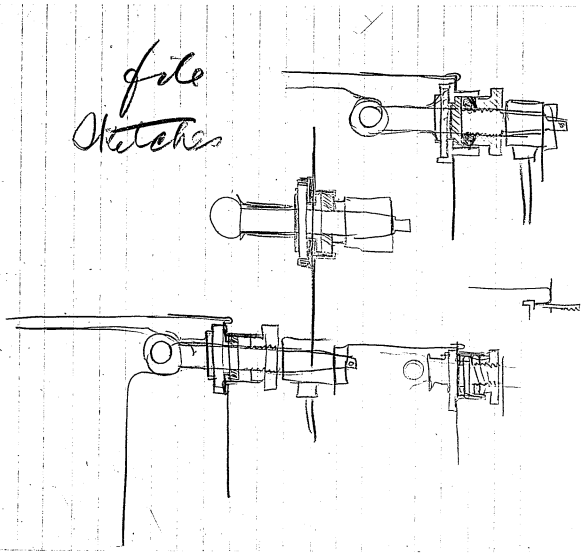
Discharging a charged Nickel only requires a little
KOH, product is Water, water is result of discharge
Moral, One to two grammes of water inside of grid
is cause of swell, it Colloids the dried nickel hydroxide
& cant dry out
Moral No 2 use Ni hydroxide already colloided
by not drying & bring to a solid by dampblack —
or Brodie's amorphous graphite,

Colloiding the ~~dry~~ dried
Hydroxide is Cause of swell, Strong KOH
Helps Colloiding — Colloiding increased area
contact —

KOH doesn't combine with NiO_2H_2 directly
but if NiO_2 H_2O is reduced by nascent
KOH the NiO_2H_2 combines to form
Nickelate of K ~~+ t~~
~~[illegible]~~ hydrated possibly 2 or more
H_2O : 1


Lock
Ferrule
Ferrule

file
Sketches



1901 - Ni 250 weak on
thread 150 or 200 finer
[illegible] mix —

1750 per Pound and only
margin — put 6 mill [illegible]
good view —

Run a Reg 20% 150 rate
discharge 30 minutes weak 5
minutes 250 on test density
Ni unstate Alum [illegible]

Charge 150 discharge 100

chromate Bromate — gas also
Ni deposit — KOH also by
heat, — also metallic —

Try 20% K or Na Chromate mixed with
Sodium — add to the Methylate —
it will count K or Na chloride
find in wood and Unstable
Sodium [illegible] + change [illegible]
into the gases [illegible] acetate [illegible]

Finally make a dip for grid 1/2 the length

also line through 40 on 80 made
Ni — weak mix —

Retto —
Kerr
Wetmore
Hoepfner & Phillips
Wickstrom Bennetts,
Kenyon — wholesup
goes Cam
against ni —

file sketches

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Syndicate 668000
60 to Directors 60000
£608000

£27000 - pref Dividend
27000 to be paid incl + Def,
£9000 pd into Construction Co. 10%
£8000 Treasury

205
30

Cap Subscd 150,000.
1500 shares

I got 205
30
9
244 abt 1/15 Dicks said

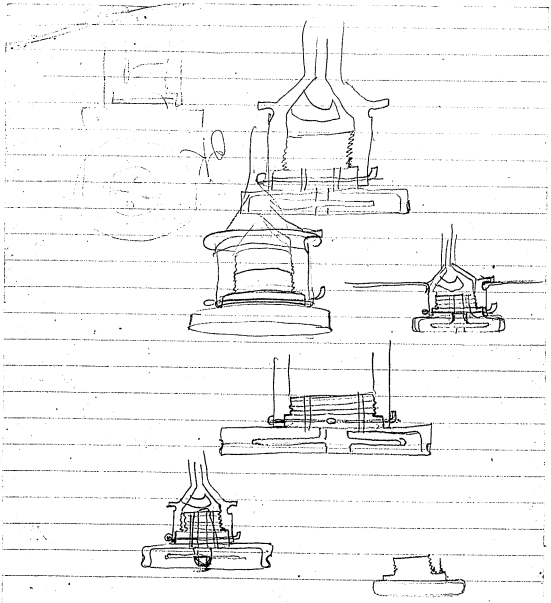
Now Inc Cap Subscd to 200000,
or £50000, my share £7500
I sell shares 3 times par to get 7500 +
then gives me £37500 of new shares —

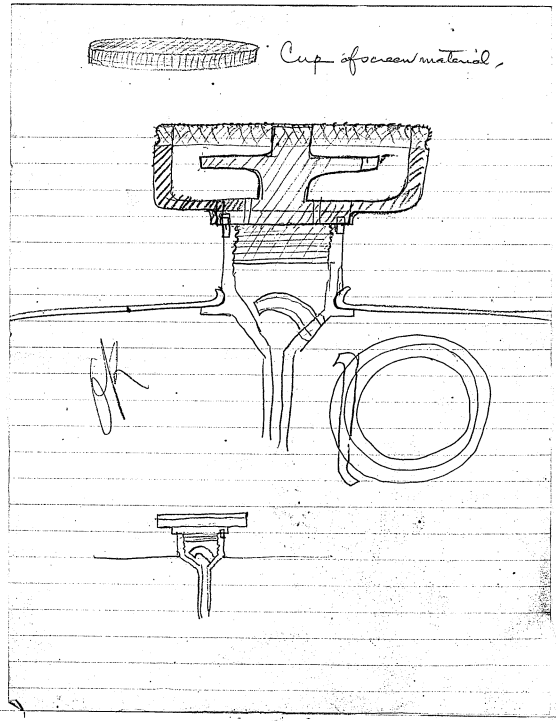
250
15
1250
2500
375
15%

2 | 235
117

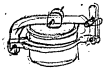
750
15
3750
7500
11250

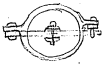
750
16
4500
750
12000
12

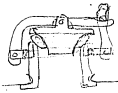



Cup of screen material,

file
Oktoches







Dehydrate Ni_2O_3 275 C — Nitrate on nickel KOH, Ni Vanadate,

Chromate of nickel — Tungstate is in Ammonia Nitr

Vanadate with the Ni [illegible] by Ni_2O_3 — will Ni_2O_3 Nitty Solid

also in KOH — [illegible] — [illegible]

[illegible] without [illegible] of Ni ab pressure [illegible] Chromate Carbonate

[illegible] — etc. [illegible] the [illegible] oxide [illegible] the [illegible] nitrate —

[illegible] 50 hours [illegible] —

[illegible] at low temperature Ni by [illegible] precip from fuse —

[illegible] KOH, with Ni KOH —

also forming a [illegible]

[illegible] Barby [illegible] KOH Ni by H from any [illegible] in H_2O + boil to

rapidly the Ni [illegible] at low temp [illegible] = Nitrate of Nickel Carbonate or double precip and light [illegible] in H_2O

Then boil Ni may Condense with Fe to make a Compound — $Ni_2O_3Fe_2O_3$ or Nickel magnetite or [illegible] —

Hence [illegible] the ignited oxide Ni - ignited very low temp — ~~with [illegible]~~

These nickel compounds to be at low density, [illegible] time —

Formate in nitric decomposes at lower temp than Oxalate.

How about igniting Ni Nitty - perhaps delay low temp + ox [illegible] + [illegible]

Nipolay. acts on [illegible] with chlorine forms like KOH + a base ~~[illegible]~~ in base with Al_2O_3 +

Force oxidizing Ni [illegible] from [illegible] [illegible] work with [illegible] [illegible] [illegible]

powdered to impalpable — 500 passes 743 proof — on ignition impure Ni Salts generally

leave prodigy organic salts leaves metallic nickel — Ni Salts ~~[illegible]~~ precip by Vanadate

NH in excess Nitty — forms $Ni_2O_3V_2O_5$ after fusion —

$5\ Co_2O_3\ 8\ H_2O$

$$\begin{array}{r} 54 \\ 2 \\ \hline 116 \\ 48 \\ \hline 164 \\ 5 \\ \hline 820 \end{array}$$

$$\begin{array}{r} 34 \\ 8 \\ \hline 272 \end{array}$$

File Sketches